

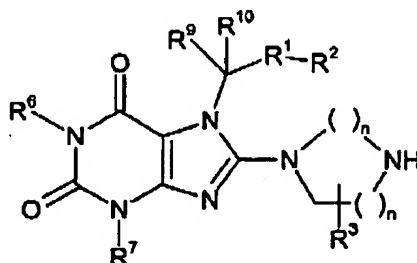
Attorney Docket No. 6197.214-US
 Kanstrup et al.
 Serial No. 10/621,302
 Filed July 17, 2003
 Via Facsimile No.: 571-273-8300

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This listing of claims will replace all prior versions and listings of claims in the application.

CLAIM LISTING

1. (Currently amended) A compound of formula I



I

wherein

each n is one or two independently

R¹ is C=O; C=S; C₁-C₂ alkylene optionally substituted with one or more R⁴ independently; C₂ alkenylene substituted with one or more R⁴ independently; C₂ alkynylene; C₃-C₇ cycloalkylene optionally substituted with one or more R⁴ independently; C₃-C₇ cycloheteroalkylene optionally substituted with one or more R⁴ independently; arylene optionally substituted with one or more R⁴ independently; arylene C₁-C₃ alkylene optionally substituted with one or more R⁴ independently; heteroarylene optionally substituted with one or more R⁴ independently; heteroarylene C₁-C₃ alkylene optionally substituted with one or more R⁴ independently; perhalo C₁-C₁₀ alkylene; and, perhalo C₁-C₁₀ alkyloxyene;

R² is H; C₁ alkyl optionally substituted with one or more R⁴ independently; C₂-C₇ alkenyl optionally substituted with one or more R⁴ independently; C₂-C₇ alkynyl optionally substituted with one or more R⁴ independently; C₃-C₇ cycloalkyl optionally substituted with one or more R⁴ independently; C₃-C₇ cycloheteroalkyl optionally substituted with one or more R⁴ independently; aryl optionally substituted with one or more R⁴ independently; aryl C₁-C₃ alkyl optionally substituted with one or more R⁴ independently; heteroaryl C₁-C₃ alkyl

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optionally substituted with one or more R^4 independently; heteroaryl optionally substituted with one or more R^4 independently, -SH; -SR⁵; -SOR⁵; -SO₂R⁵; -CHO; -CH(OR⁵)₂; carboxy; -CO₂R⁴; NHCONNH₂; -NHCSNH₂; -NHCONH₂; -NHCOR⁴; -NH₂SO₂R⁵; -O-CO-(C₁-C₃) alkyl optionally substituted with one or more R^4 independently; cyano; nitro; halogen; hydroxy; perhalo C₁-C₇ alkyl; perhalo C₁-C₇ alkyloxy; -SO₂NH₂; -SO₂NH(R⁵); -SO₂(R⁵)₂; -CONH₂; -CSNH₂; -CON₂H₃; -CONH(R⁵); -CON(R⁵)₂; C₁-C₁₀ alkyloxy optionally substituted with R^4 independently; C₂-C₁₀ alkenyloxy optionally substituted with R^4 ; C₂-C₁₀ alkynyloxy optionally substituted with R^4 independently, aryloxy optionally substituted with R^4 independently; heteroaryloxy optionally substituted with R^4 independently;

R^3 is H; C₁-C₁₀ alkyl optionally substituted with one or more R^4 independently; C₂-C₁₀ alkenyl optionally substituted with one or more R^4 independently; C₂-C₁₀ alkynyl optionally substituted with one or more R^4 independently; C₃-C₇ cycloalkyl optionally substituted with one or more R^4 independently; C₃-C₇ cycloheteroalkyl optionally substituted with one or more R^4 independently; aryl optionally substituted with one or more R^4 independently; aryl C₁-C₃ alkyl optionally substituted with one or more R^4 independently; heteroaryl C₁-C₃ alkyl optionally substituted with one or more R^4 independently; heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-NH(CH₂)₁₋₄NH-aryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-NH(CH₂)₁₋₄NH-heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-O(CH₂)₁₋₄NH-aryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-O(CH₂)₁₋₄NH-heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-O(CH₂)₁₋₄O-aryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-O(CH₂)₁₋₄O-heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-S(CH₂)₁₋₄NH-aryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-S(CH₂)₁₋₄NH-heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-S(CH₂)₁₋₄S-aryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-S(CH₂)₁₋₄S-heteroaryl optionally substituted with one or more R^4 independently; C₁-C₁₀ alkyl-O-C₁-C₃alkyl optionally substituted with one or more R^4 ; -NHCOR⁴; -NH₂SO₂R⁵; -O-CO-(C₁-C₃) alkyl optionally substituted with one or more R^4 independently; -SH; -SR⁵; -SOR⁵; -SO₂R⁵; -CHO; -CH(OR⁵)₂; carboxy; cyano; nitro; halogen; hydroxy; -SO₂NH₂; -SO₂NH(R⁵);

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-SO₂N(R⁵)₂; -CONH₂; -CONH(R⁵); -CON(R⁵)₂; -CSNH₂; -CONHNH₂; -CO₂R⁴; -
 NHCNHNH₂; -NHCSNH₂; -NHCONH₂;

R⁴ is C₁ alkyl optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkenyl optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkynyl optionally substituted with one or more R⁸ independently; C₃-C₇ cycloalkyl optionally substituted with one or more R⁸ independently; C₃-C₇ cycloheteroalkyl optionally substituted with one or more R⁸ independently; aryl optionally substituted with one or more R⁸ independently; heteroaryl optionally substituted with one or more R⁸ independently; amino; amino substituted with one or more C₁-C₁₀ alkyl optionally substituted with one or more R⁸; amino substituted with one or two aryl optionally substituted with one or more R⁸ independently; heteroaryl optionally substituted with one or more R⁸ independently; =O; =S; -CO-R⁵; -COOR⁵; -O-CO-(C₁-C₅) alkyl optionally substituted with one or more R⁸ independently; NH(CH₂)₁₋₄NH-aryl; NH(CH₂)₁₋₄NH-heteroaryl; -NHCOR⁵; -SOR⁵; SO₂R⁵; carboxy; cyano; N-hydroxyimino; nitro; halogen; hydroxy; perhalo C₁-C₁₀ alkyl; perhalo C₁-C₁₀ alkyloxy; -SH; -SR⁵; -SO₃H; -SO₃R⁵; -SO₂R⁵; -SO₂NH₂; -SO₂NH(R⁵); -SO₂N(R⁵)₂; -CONH₂; -CONH(R⁵); -CON(R⁵)₂; C₁-C₁₀ alkyloxy optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkenyloxy optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkynyloxy optionally substituted with one or more R⁸ independently; aryloxy optionally substituted with one or more R⁸ independently; heteroaryloxy optionally substituted with one or more R⁸ independently; and when two R⁴ are attached to the same carbon atom, they, together with the carbon atom, may form a spiroheterocyclic system selected from hydantoin; thiohydantoin; and oxazolidine-2,5-dione;

R⁵ is C₁-C₁₀ alkyl optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkenyl optionally substituted with one or more R⁸ independently; C₂-C₁₀ alkynyl optionally substituted with one or more R⁸ independently; C₃-C₇ cycloalkyl optionally substituted with one or more R⁸ independently; C₃-C₇ cycloheteroalkyl optionally substituted with one or more R⁸ independently; aryl optionally substituted with one or more R⁸ independently; aryl C₁-C₅ alkyl optionally substituted with one or more R⁸ independently; heteroaryl optionally

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substituted with one or more R^8 independently; heteroaryl C_1 - C_5 alkyl optionally substituted with one or more R^8 independently;

R^6 is H; C_1 - C_{10} alkyl optionally substituted with one or more R^4 independently; C_2 - C_{10} alkenyl optionally substituted with one or more R^4 independently; C_2 - C_{10} alkynyl optionally substituted with one or more R^4 independently; C_3 - C_7 cycloalkyl optionally substituted with one or more R^4 independently; C_3 - C_7 cycloheteroalkyl optionally substituted with one or more R^4 independently; aryl optionally substituted with one or more R^4 independently; heteroaryl optionally substituted with one or more R^4 independently;

R^7 is H; C_1 - C_{10} alkyl optionally substituted with one or more R^4 independently; C_2 - C_{10} alkenyl optionally substituted with one or more R^4 independently; C_2 - C_{10} alkynyl optionally substituted with one or more R^4 independently; C_3 - C_7 cycloalkyl optionally substituted with one or more R^4 independently; C_3 - C_7 cycloheteroalkyl optionally substituted with one or more R^4 independently; aryl optionally substituted with one or more R^4 independently; heteroaryl optionally substituted with one or more R^4 independently;

R^8 is H [(,)] ; ~~amidoxime~~; nitro [(,)] ; tetrazole; pentafluorophenyl; $-CH_2OH$; $-CHO$; $-COCH_3$; $-CF_3$; $-CCl_3$; $-OCF_3$; $-OCH_3$; $-CN$; $-CO_2CH_3$; $-CONH_2$; $-CSNH_2$; $-CON_2H_3$; $-SO_3H$; $-SO_2NH_2$; $-SO_2NHCH_3$; $-SO_2N(CH_3)_2$; $-SO_2$ (1-piperazinyl); $-SO_2$ (4-methylpiperazin-1-yl); $-SO_2$ (pyrrolidin-1-yl); $-SO_2$ (piperidin-1-yl); $-SO_2$ (morpholin-4-yl); N-hydroxyimino; $-NH_2$; $-NHCH_3$; $-N(CH_3)_2$; $-NHCNHNH_2$; $-NHCNHNHCH_3$; $-NHCSNH_2$; $-NHCSNHCH_3$; $-NHCONH_2$; $-NHCONHCH_3$; $-NHCOCH_3$; $-NHOSO_2CH_3$; piperazinyl; morpholin-4-yl; thiomorpholin-4-yl; pyrrolidin-1-yl; piperidin-1-yl; halogen; $-OH$; $-SH$; $-SCH_3$; $-aminoacetyl$; $-OPO_3H_2$; $OPO(OH)(OCH_3)$; $-PO_3H_2$; $-PO(OCH_3)_2$; $PO(OH)(OCH_3)$;

R^9 is H; halogen; C_1 - C_{10} alkyl optionally substituted with one or more R^4 independently

R^{10} is H; halogen;

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or, R⁹ and R¹⁰, together with the carbon atom to which they are attached, may be connected to form a cyclopropyl ring;

or a salt thereof with a pharmaceutically acceptable acid or base;

with the exception of the following compounds:

7-(3-Chloro-propyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione;
7-(3-Amino-propyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione;
3-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydro-purin-7-yl)-propionaldehyde;
1,3-dimethyl-7-(2-oxo-propyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
1,3,1',3',7'-pentamethyl-8-piperazin-1-yl-3,7,3',7'-tetrahydro-7,8'-methanediyl-bis-purine-2,6-dione,
7-[2-Hydroxy-3-(4-methoxy-phenoxy)-propyl]-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-[2-hydroxy-2-(4-nitro-phenyl)-ethyl]-3-methyl-8-piperazin-1-yl-3,7,8,9-tetrahydro-purine-2,6-dione,
7-Benzyl-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-(4-Chloro-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-(2-Chloro-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-Ethyl-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3-Methyl-8-piperazin-1-yl-1,7-dipropyl-3,7-dihydro-purine-2,6-dione,
3-Methyl-7-(3-methyl-butyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-Butyl-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3-Methyl-7-(3-phenyl-propyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-But-2-enyl-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-(3-Chloro-but-2-enyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3-Methyl-7-(1-phenyl-ethyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3-Methyl-7-(3-methyl-benzyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione, and
3-Methyl-7-propyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione.

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2. (Original) A pharmaceutical composition comprising at least one compound according to claim 1 together with a pharmaceutically acceptable carrier or diluent.

3. (Previously presented) A compound according to claim 1 selected from the following:

7-Benzyl-8-(6-hydroxymethyl-[1,4]diazepan-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
7-Benzyl-8-(6-hydroxy-[1,4]diazepan-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
7-Benzyl-8-(3-hydroxymethyl-[1,4]diazepan-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
7-Benzyl-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
1,3-Dimethyl-7-(4-methylbenzyl) -8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
3-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl) benzonitrile,
2-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl) benzonitrile,
1,3-Dimethyl-7-(1-phenylethyl) -8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-(2-Iodobenzyl) -1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
1,3-Dimethyl-8-piperazin-1-yl-7-(2-trifluoromethylbenzyl) -3,7-dihydropurine-2,6-dione,
1,3-Dimethyl-7-naphthalen-1-ylmethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
1,3-Dimethyl-7-naphthalen-2-ylmethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-(3-Bromobenzyl) -1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-Benzyl-8-(3-isopropylpiperazin-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
7-Benzyl-8-[1,4]diazepan-1-yl-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
1,3-Dimethyl-7-(2-oxo-2-pyrrolidin-1-yl-ethyl) -8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
2-(8-[1,4]Diazepan-1-yl-1,3-dimethyl-2,6-dioxo-1,2,3,6-tetrahydro-purin-7-ylmethyl) - benzonitrile,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl) -1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
7-(2-Difluoromethoxy-benzyl) -1,3-dimethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
7-(2,3-Dimethoxy-benzyl) -1,3-dimethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione, and
1,3-Dimethyl-8-piperazin-1-yl-7-(2-trifluoromethoxy-benzyl) -3,7-dihydro-purine-2,6-dione.

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4. (Previously presented) A compound according to claim 1 selected from the following:
- 1,3-Dimethyl-8-piperazin-1-yl-7-(2-trifluoromethylsulfanyl-benzyl) -3,7-dihydro-purine-2,6-dione,
- 4-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydro-purin-7-yl) -butyronitrile,
- (R) -7-Benzyl-8-(3-isopropylpiperazin-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
- (S) -7-Benzyl-8-(3-isopropylpiperazin-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
- 7-Benzyl-8-(6,9-diazaspiro[4.5]dec-9-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
- 7-Benzyl-8-(piperazin-3-spiro-3'-bicyclo[2,2,1]heptane-1-yl) -1,3-dimethyl-3,7-dihydropurine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-7-(2-methoxy-benzyl) -1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-1,3-dimethyl-7-naphthalen-1-ylmethyl-3,7-dihydro-purine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-7-(2-fluoro-benzyl) -1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-1,3-dimethyl-7-(2-methyl-benzyl) -3,7-dihydro-purine-2,6-dione,
- 7-(2-Chloro-benzyl) -8-[1,4]diazepan-1-yl-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
- 7-(2-Bromo-benzyl) -8-[1,4]diazepan-1-yl-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-1,3-dimethyl-7-(2-trifluoromethyl-benzyl) -3,7-dihydro-purine-2,6-dione,
- 8-[1,4]Diazepan-1-yl-1,3-dimethyl-7-(2-nitro-benzyl) -3,7-dihydro-purine-2,6-dione,
- 3-Benzyl-8-piperazin-1-yl-7-(2-trifluoromethyl-benzyl) -3,7-dihydro-purine-2,6-dione,
- 3,7-Dibenzyl-1-(2-hydroxy-ethyl) -8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
- 3-Benzyl-7-phenethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
- 3,7-Dibenzyl-8-[1,4]diazepan-1-yl-3,7-dihydro-purine-2,6-dione, and
- 7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione.

5. (Previously presented) A compound according to claim 1 selected from the following:
- 3,7-Dibenzyl-8-[1,4]diazepan-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
- 3,7-Dibenzyl-8-[1,4]diazepan-1-yl-1-(2-hydroxy-ethyl) -3,7-dihydro-purine-2,6-dione,
- 2-(3,7-Dibenzyl-8-[1,4]diazepan-1-yl-2,6-dioxo-2,3,6,7-tetrahydro-purin-1-yl) -N,N-diethyl-acetamide,
- 1,3,7-Tribenzyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

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1,3,7-Tribenzyl-8-[1,4]diazepan-1-yl-3,7-dihydro-purine-2,6-dione,
(S)-7-Benzyl-8-(3-benzyloxymethylpiperazin-1-yl)-1,3-dimethyl-3,7-dihydropurine-2,6-dione,
3,7-Dibenzyl-8-piperazin-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
3,7-Dibenzyl-8-[1,4]diazepan-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
3,7-Dibenzyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3,7-Dibenzyl-8-[1,4]diazepan-1-yl-3,7-dihydro-purine-2,6-dione,
2-(3-Benzyl-2,6-dioxo-8-piperazin-1-yl-1-propyl-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
2-(3-Benzyl-8-[1,4]diazepan-1-yl-2,6-dioxo-1-propyl-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
2-(3-Benzyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
2-(3-Benzyl-8-[1,4]diazepan-1-yl-2,6-dioxo-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
3-Benzyl-7-(2-iodo-benzyl)-8-piperazin-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
3-Benzyl-8-[1,4]diazepan-1-yl-7-(2-iodo-benzyl)-1-propyl-3,7-dihydro-purine-2,6-dione,
3-Benzyl-7-(2-iodo-benzyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
3-Benzyl-8-[1,4]diazepan-1-yl-7-(2-iodo-benzyl)-3,7-dihydro-purine-2,6-dione,
7-Benzyl-3-methyl-8-piperazin-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-propyl-3,7-dihydro-purine-2,6-dione, and
7-Benzyl-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione.

6. (Previously presented) A compound according to claim 1 selected from the following:

7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione,
2-(3-Methyl-2,6-dioxo-8-piperazin-1-yl-1-propyl-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
2-(8-[1,4]Diazepan-1-yl-3-methyl-2,6-dioxo-1-propyl-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,
2-(8-[1,4]Diazepan-1-yl-3-methyl-2,6-dioxo-1,2,3,6-tetrahydro-purin-7-ylmethyl) – benzonitrile,

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7-(2-Iodo-benzyl) -3-methyl-8-piperazin-1-yl-1-propyl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl) -3-methyl-1-propyl-3,7-dihydro-purine-2,6-dione,
7-(2-Iodo-benzyl) -3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl) -3-methyl-3,7-dihydro-purine-2,6-dione,
3-Benzyl-8-[1,4]diazepan-1-yl-1-(3-hydroxy-propyl) -7-(2-iodo-benzyl) -3,7-dihydro-purine-
2,6-dione,
3-Benzyl-8-[1,4]diazepan-1-yl-1-(2-ethoxy-ethyl) -7-(2-iodo-benzyl) -3,7-dihydro-purine-2,6-
dione,
7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-(3-phenyl-allyl) -3,7-dihydro-purine-2,6-dione,
7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-(2-oxo-2-phenyl-ethyl) -3,7-dihydro-purine-2,6-
dione,
2-(7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-2,6-dioxo-2,3,6,7-tetrahydro-purin-1-ylmethyl) -
benzonitrile,
(7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-2,6-dioxo-2,3,6,7-tetrahydro-purin-1-yl) -
acetonitrile,
3-Methyl-7-(2-methyl-thiazol-4-ylmethyl) -8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-3-methyl-7-(2-methyl-thiazol-4-ylmethyl) -3,7-dihydro-purine-2,6-
dione,
3-Methyl-7-(2-oxo-2-phenyl-ethyl) -8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-3-methyl-7-(2-oxo-2-phenyl-ethyl) -3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-3-methyl-7-phenethyl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(3-hydroxy-propyl) -7-(2-iodo-benzyl) -3-methyl-3,7-dihydro-purine-
2,6-dione, and
1-(3-Hydroxy-propyl) -7-(2-iodo-benzyl) -3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-
dione.

7. (Previously presented) A compound according to claim 1 selected from the following:
8-[1,4]Diazepan-1-yl-1-(2-ethoxy-ethyl) -7-(2-iodo-benzyl) -3-methyl-3,7-dihydro-purine-
2,6-dione,

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1-(2-Ethoxy-ethyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-1-(2-phenoxy-ethyl)-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-1-[2-(2-methoxy-ethoxy)-ethyl]-3-methyl-3,7-dihydro-purine-2,6-dione,
7-(2-Iodo-benzyl)-1-[2-(2-methoxy-ethoxy)-ethyl]-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(3,5-dimethoxy-benzyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-1-(3-methoxy-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
7-Biphenyl-2-ylmethyl-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione,
7-(2-Bromo-benzyl)-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione,
7-(2-Chloro-benzyl)-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione,
7-Benzyl-8-(3,5-dimethyl-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,
7-(4-Methoxybenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-yl)-phenylacetic acid methyl ester,
7-(5-Chloro-2-nitrobenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
4-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl) benzonitrile,
7-(4-Methanesulfonylbenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-(2-Fluoro-6-nitrobenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-(4-Benzyloxybenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
7-(2,4-Dichlorobenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,
1,3-Dimethyl-8-piperazin-1-yl-7-(4-trifluoromethylbenzyl)-3,7-dihydropurine-2,6-dione, and
7-Biphenyl-4-ylmethyl-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione.

8. (Previously presented) A compound according to claim 1 selected from the following:

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3-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl) benzoic acid methyl ester,

4-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl) benzoic acid methyl ester,

7-Biphenyl-2-ylmethyl-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,

7-(4-tert-Butylbenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,

1,3-Dimethyl-8-piperazin-1-yl-7-(4-trifluoromethoxybenzyl)-3,7-dihydropurine-2,6-dione,

7-(3,4-Dichlorobenzyl)-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydropurine-2,6-dione,

1,3-Dimethyl-8-piperazin-1-yl-7-(4-[1,2,3]thiadiazol-4-ylbenzyl)-3,7-dihydropurine-2,6-dione,

4-(1,3-Dimethyl-2,6-dioxo-8-piperazin-1-yl-1,2,3,6-tetrahydropurin-7-ylmethyl)-3-methoxybenzoic acid methyl ester,

7-Cyclohexylmethyl-1,3-dimethyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

7-Benzyl-8-(2,5-diaza-bicyclo[2.2.1]hept-2-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

8-(6-Benzyl-[1,4]diazepan-1-yl)-7-(2-iodo-benzyl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

(S)-7-Benzyl-8-(3-hydroxymethylpiperazin-1-yl)-1,3-dimethyl-3,7-dihydropurine-2,6-dione,

8-[1,4]Diazepan-1-yl-1,3-dimethyl-7-(2-oxo-2-pyrrolidin-1-yl-ethyl)-3,7-dihydro-purine-2,6-dione,

7-(2-Iodo-benzyl)-1,3-dimethyl-8-(6-pyridin-2-ylmethyl-[1,4]diazepan-1-yl)-3,7-dihydro-purine-2,6-dione,

7-(2-Bromo-benzyl)-1,3-dimethyl-8-(6-pyridin-2-ylmethyl-[1,4]diazepan-1-yl)-3,7-dihydro-purine-2,6-dione,

(S)-7-Benzyl-8-(3-benzyl-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

7-Benzyl-1,3-dimethyl-8-(3-phenethyl-piperazin-1-yl)-3,7-dihydro-purine-2,6-dione,

(R)-7-Benzyl-8-(3-benzylpiperazin-1-yl)-1,3-dimethyl-3,7-dihydropurine-2,6-dione,

7-Benzyl-8-(3-(2-hydroxy-benzyl)-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione, and

7-Benzyl-8-(3-(2-methoxy-benzyl)-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione.

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9. (Previously presented) A compound according to claim 1 selected from the following:

(R)-7-Benzyl-8-(3-(4-methoxy-benzyl)-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

(R)-7-Benzyl-8-(3-(4-hydroxy-benzyl)-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

(R)-7-Benzyl-1,3-dimethyl-8-(3-(4-nitro-benzyl)-piperazin-1-yl)-3,7-dihydro-purine-2,6-dione,

(R)-7-Benzyl-8-(3-(4-fluoro-benzyl)-piperazin-1-yl)-1,3-dimethyl-3,7-dihydro-purine-2,6-dione,

(R)-4-(4-(7-Benzyl-1,3-dimethyl-2,6-dioxo-2,3,6,7-tetrahydro-1H-purin-8-yl)-piperazin-2-ylmethyl)-benzonitrile,

(R)-6-(8-(3-Benzyl-piperazin-1-yl)-1,3-dimethyl-2,6-dioxo-1,2,3,6-tetrahydro-purin-7-ylmethyl)-nicotinonitrile,

(R)-7-Benzyl-1,3-dimethyl-8-(3-thiazol-4-ylmethyl-piperazin-1-yl)-3,7-dihydro-purine-2,6-dione,

(R)-2-[1,3-Dimethyl-2,6-dioxo-8-(3-thiophen-2-ylmethyl-piperazin-1-yl)-1,2,3,6-tetrahydro-purin-7-ylmethyl]-benzonitrile,

7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-(tetrahydro-furan-2-ylmethyl)-3,7-dihydro-purine-2,6-dione,

7-Benzyl-1-(2-cyclohexyl-ethyl)-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione,

7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-(5-methyl-hexyl)-3,7-dihydro-purine-2,6-dione,

7-Benzyl-8-[1,4]diazepan-1-yl-3-methyl-1-(3-methyl-butyl)-3,7-dihydro-purine-2,6-dione,

7-Benzyl-8-[1,4]diazepan-1-yl-1-(2-ethoxy-ethyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-1-(tetrahydro-furan-2-ylmethyl)-3,7-dihydro-purine-2,6-dione,

7-(2-Iodo-benzyl)-3-methyl-8-piperazin-1-yl-1-(tetrahydro-furan-2-ylmethyl)-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-1-(tetrahydro-pyran-2-ylmethyl)-3,7-dihydro-purine-2,6-dione,

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7-(2-Iodo-benzyl)-3-methyl-8-piperazin-1-yl-1-(tetrahydro-pyran-2-ylmethyl)-3,7-dihydro-purine-2,6-dione,

7-(2-Iodo-benzyl)-3-methyl-1-(2-phenoxy-ethyl)-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione, and

8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-1-(2-methoxy-ethyl)-3-methyl-3,7-dihydro-purine-2,6-dione.

10. (Previously presented) A compound according to claim 1 selected from the following:

7-(2-Iodo-benzyl)-1-(2-methoxy-ethyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

1-(2-Benzoyloxy-ethyl)-8-[1,4]diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

1-(2-Benzoyloxy-ethyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

1-(3,5-Dimethoxy-benzyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

7-(2-Iodo-benzyl)-1-(3-methoxy-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-1-(3-trifluoromethoxy-benzyl)-3,7-dihydro-purine-2,6-dione,

7-(2-Iodo-benzyl)-3-methyl-8-piperazin-1-yl-1-(3-trifluoromethoxy-benzyl)-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-1-(2-hydroxy-propyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-1-(2,2-diethoxy-ethyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-1-(2,2-dimethoxy-ethyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

8-[1,4]Diazepan-1-yl-1-(2-[1,3]dioxolan-2-yl-ethyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,

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1-(2-[1,3]Dioxolan-2-yl-ethyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
1-[1,3]Dioxolan-2-ylmethyl-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(2-[1,3]dioxan-2-yl-ethyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
1-(2-[1,3]Dioxan-2-yl-ethyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(2,3-dihydroxy-propyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
1-(2,3-Dihydroxy-propyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(3-hydroxy-2-methyl-propyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
1-(3-Hydroxy-2-methyl-propyl)-7-(2-iodo-benzyl)-3-methyl-8-piperazin-1-yl-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-7-(2-iodo-benzyl)-3-methyl-1-[3-(tetrahydro-pyran-2-yloxy)-propyl]-3,7-dihydro-purine-2,6-dione,
8-[1,4]Diazepan-1-yl-1-(2-fluoro-ethyl)-7-(2-iodo-benzyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
7-Benzyl-8-[1,4]diazepan-1-yl-1-(3-hydroxy-propyl)-3-methyl-3,7-dihydro-purine-2,6-dione,
and
7-Biphenyl-2-ylmethyl-8-[1,4]diazepan-1-yl-3-methyl-3,7-dihydro-purine-2,6-dione.